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BY THE U.S. GENERAL ACCOUNTING OFFICE

Report To The Secretary Of The Air Force

COMPLETED
20

Requirements For Munitions Lift Trailers To Support Strategic Bombers

Munitions lift trailers are large support vehicles used to transport and load air launched cruise missiles and other nuclear weapons onto strategic bombers. The Air Force has identified total requirements for 245 trailers for B-52 and B-1B bombers. About one-third of these trailers have been acquired. The Air Force Aeronautical Systems Command is considering remanufacturing 80 of the lift trailers it has acquired for B-52s to incorporate recent design improvements which are expected to make these trailers easier to operate and less costly to support.

GAO believes Air Force requirements for new trailers may be overstated by as many as 39 trailers. This could result in the unnecessary expenditure of up to $13 million. GAO also questions the cost effectiveness of remanufacturing the 80 trailers, which would cost $20 million.

ORIGINAL

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UNITED STATES GENERAL ACCOUNTING OFFICE
WASHINGTON, D.C. 20548

NATIONAL SECURITY AND
INTERNATIONAL AFFAIRS DIVISION

B-218826

The Honorable Verne Orr
The Secretary of the Air Force

Dear Mr. Secretary:

We have reviewed several issues surrounding the Air Force's acquisition and modification of MHU-173 munitions lift trailers for B-52 and B-1B bombers. These trailers are large support vehicles used to transport and load air launched cruise missiles and other nuclear weapons onto strategic bombers. Currently, the Air Force has identified requirements for 245 munitions lift trailers--153 to support B-52 bombers and 92 to support B-1B bombers. To date, 82 lift trailers have been acquired for B-52 bombers and the remaining 71 have been ordered. The Air Force Aeronautical Systems Command is considering remanufacturing the lift trailers acquired for B-52s to incorporate recent design improvements to make these lift trailers easier to operate and less costly to support. In fiscal year 1985 the Air Force plans to begin acquiring the 92 lift trailers needed for B-1B bombers.

Numerous problems were experienced with MHU-173 lift trailers when they were initially deployed. The Air Force has taken several steps to overcome these problems. It has also tested an improved version of this lift trailer, and has also decided to develop and procure a new trailer for B-1B bombers. While these initiatives may reduce future lift trailer costs, our evaluation indicates current trailer requirements for the B-52s and B-1Bs may be overstated. This could result in acquiring as many as 39 more lift trailers than may be needed at an estimated cost of $13 million. Also, because it is not clear how long MHU-173 lift trailers will be used, remanufacturing them to incorporate design improvements, costing an additional $20 million, may not be cost effective.

BACKGROUND

The Air Force developed the MHU-173 munitions lift trailer in the late 1970s to load air-launched cruise missiles on B-52 bombers. Development of the MHU-173 and associated support equipment, initial spare parts, and technical documentation cost about $13 million. The Air Force has acquired 82 MHU-173 lift trailers at an average unit cost of $588,000 and has 71 improved MHU-173 trailers on order.

MHU-173 initial operational experience was characterized by numerous operational, maintenance and support problems. The Air Force considers the MHU-173 to be more complex and more prone to failure than lift trailers used by the Strategic Air Command (SAC) in the past. Air Force analyses show that certain trailer parts failed more frequently than expected, which placed a heavy burden on spare parts support systems. Furthermore, these problems were aggravated by limited availability of technical manuals and limited operator and maintenance personnel training and experience. Taken together, these conditions resulted in low trailer availability, unexpectedly high repair parts demands, and a general dissatisfaction with the MHU-173 during initial deployment.

These problems have been largely overcome following increased management oversight, experience gained in using the trailers and improvements to supply and support systems. For example, MHU-173 availability increased from 68 percent in mid-1983 to an average of 82 percent in 1984. While its performance is improving, the MHU-173 remains more costly to operate and support than the Air Force desires. Accordingly, a major redesign of the MHU-173 was approved in December 1983 to make this lift trailer easier to operate and less costly to acquire and support.

In 1984 the Air Force remanufactured 2 of its 82 MHU-173 lift trailers to the improved MHU-173 configuration. Preliminary tests indicate the improved MHU-173 is easier to operate, and the Air Force estimates annual support costs will be about four times lower. The improved MHU-173 can also support B-1B bombers and can be delivered in time to meet the B-1B testing and initial deployment requirements.

Therefore, the Air Force stopped buying MHU-173s with the 82nd trailer and has contracted for 71 improved MHU-173s to meet B-52 requirements for 153 lift trailers. The Air Force Aeronautical Systems Division is also considering remanufacturing the remaining 80 unimproved MHU-173s to incorporate all of the features of the improved version.

In March 1984 the Air Force requested proposals for a new lift trailer to support B-1B and future bombers that was simpler, more reliable, and less costly than the improved MHU-173. However, since the improved MHU-173 could support the B-1B, the Air Force made provision for evaluating the improved MHU-173 design against the winner of the new design competition.

The proposal submitted by PACCAR, Inc., Bellevue, Washington, was selected winner of the new design competition and, in December 1984, the Air Force decided to buy the PACCAR trailers rather than improved MHU-173s to satisfy B-1B requirements. The Air Force hopes to begin acquiring 92 trailers for use with B-1Bs in fiscal year 1985.

LIFT TRAILER REQUIREMENTS MAY BE OVERSTATED

The Air Force has identified requirements for 245 munitions lift trailers to support B-52G, B-52H, and B-1B strategic bombers. These requirements are based upon a ratio of 1 lift trailer for every 3 weapons loads these bombers are to carry. Weapons loads include B-52 cruise missile wing pylons, cruise missile internal rotary launchers, and B-1B internal nuclear weapon launchers. For a planned force of 270 bombers, planned weapon loads and lift trailer requirements are shown below.

Bomber type	Number of aircraft	Weapons loads		Lift trailers required (total weapon loads ÷ 3)
		Each aircraft	Total	
B-52G	90	2 wing pylons	180	60
B-52H	90	2 wing pylons	180	60
		1 internal launcher	90	30
B-1B	90	3 internal launchers	270	90
Development and training				5
Total	270			245

Our evaluation indicates that current lift trailer requirements may be overstated because

—they are based on an outdated 1977 SAC analysis that assumes a bomber force structure that has changed significantly,

—operational plans at an existing bomber base and lift trailer availability data indicate fewer lift trailers may be needed, and

—B-1B bombers are designed to carry three internal weapon loads but may only carry two.

SAC's 1977 lift trailer requirements analysis should be updated

In 1977 SAC prepared an analysis of the number of munitions lift trailers needed to support a force of 151 B-52G bombers

equipped to carry cruise missiles. At the time of the analysis, the Air Force expected to equip each B-52G bomber with two cruise missile pylons and one internal launcher for cruise missiles (three weapons loads). The SAC analysis concluded that one lift trailer was required to load each B-52G bomber with the three weapons loads it was expected to carry. Our discussions with SAC officials indicated that this analysis

--was prepared during early stages of cruise missile and associated B-52 modifications development and before MHU-173 development had begun,

--assumed a cruise missile carrier force of 151 B-52G bombers, and

--has not been updated to reflect actual experience using MHU-173 lift trailers.

Because SAC's analysis was prepared before cruise missiles and MHU-173 lift trailers were delivered in 1981, the study relied upon previous experience loading nuclear weapons using older lift trailers. While this method may have been the best available in 1977, differences between actual experience loading cruise missiles on B-52Gs using MHU-173 lift trailers and the assumptions used in SAC's analysis could affect the validity of the 1:3 ratio.

The cruise missile carrier force of 151 B-52G bombers assumed in SAC's analysis changed significantly in 1981 with the decision to produce B-1B bombers. As a result of this decision, the number of B-52G bombers to be equipped with cruise missiles was reduced from 151 to 90 and the number of cruise missile weapons loads planned for each B-52G was reduced from 3 to 2. In addition, all 90 B-52H bombers are to be equipped to carry 3 cruise missile weapon loads and all 90 B-1B bombers are designed to carry 3 internal weapon loads.

SAC has updated its lift trailer requirements to reflect the force structure changes since 1977. However, SAC's methodology for computing lift trailer requirements has not been updated to reflect the operational experience acquired by the Air Force since 1977. Instead, the 1:3 ratio of lift trailers to weapon loads has been applied to the currently planned force structure to derive current lift trailer requirements.

For this, and other reasons cited below, we believe a reanalysis of lift trailer requirements is needed to provide a sound basis for planned procurements.

The operational plan at Griffiss Air Force Base and lift trailer availability data indicate B-52 requirements may be overstated

The SAC official responsible for monitoring the acquisition of munitions lift trailers told us that a more accurate assessment of lift trailer requirements could be obtained from individual bomber bases. Each base prepares a force generation plan that precisely identifies the tasks and equipment necessary to bring all assigned bombers to a full alert status.

We visited Griffiss Air Force Base, New York, where 12 MHU-173 lift trailers are assigned to support B-52G bombers equipped to carry cruise missiles. Some of these bombers are continuously on alert and fully weapons loaded. The Griffiss force generation plan calls for eight MHU-173 lift trailers to load cruise missile pylons on the non-alert B-52G bombers. A review of this plan and discussions with Griffiss personnel indicate that the eight-trailer requirement is based on a specified time period to load these bombers considering

—the worst likely weather conditions, including both snow and ice on roads between the weapons storage facility and awaiting bombers as well as on the loading area;

—transit and loading time expected of the most inexperienced loading crew; and

—potential delays caused by malfunctioning equipment.

In essence, allowance has been made for some of the problems that may be encountered in an emergency. However, in addition to the eight lift trailers required to load non-alert bombers, Griffiss staff responsible for lift trailer operations told us they needed four additional lift trailers: two as spares, one to maintain and check out cruise missile pylons, and one to train and certify loading crews.

Based on recent Air Force availability data for MHU-173s and results of practice force generations, we believe that two spare trailers may not be needed at Griffiss. Since January 1984 availability rates for MHU-173 lift trailers at Griffiss have averaged 81 percent. During the same period, lift trailer availability at all B-52G bases averaged 82 percent. The other lift trailers were either undergoing maintenance, awaiting spare parts, or both. This availability data, which we did not verify, indicates that under normal operations 10 of 12 MHU-173 lift trailers assigned to B-52G bases were available to support bomber force generations. As discussed above, Griffiss plans for only eight trailers to support force generation.

Air Force officials told us the MHU-173 has an extensive preventive maintenance program, including required 30-day inspections

as well as more extensive semi-annual and annual inspections. This preventive maintenance program is now being examined to find ways to reduce the time to accomplish it while still ensuring safe and reliable trailer operation. Also, Air Force officials told us they believe the availability of spare parts will improve as the supply system supporting these lift trailers matures. Reductions in preventive maintenance time and increased availability of spare parts may further increase the percentage of MHU-173 lift trailers available to the bomber force in the future.

Griffiss Air Force Base officials told us that during force generation, every effort is made to complete trailer repairs rapidly and nonessential maintenance is deferred. Also, crew training and routine maintenance on cruise missile pylons are suspended, thus releasing these trailers for aircraft loading. During a June 1984 practice force generation at Griffiss, all assigned lift trailers operated satisfactorily.

The Griffiss Air Force Base generation plan allows for expected problems during force generation and lift trailers normally assigned to training and maintenance functions would be available to assure that at least the eight lift trailers required are operating. Accordingly, we believe two spare MHU-173 lift trailers may not be needed at Griffiss. Since each of the 5 B-52G bomber wings is to be assigned 12 munitions lift trailers (for a total of 60), we believe a reanalysis of lift trailer requirements based on force generation plans could show that up to 10 lift trailers may not be needed. Similarly, since B-52G and B-52H bombers are identical with respect to loading cruise missile pylons, Air Force requirements for 60 lift trailers to load the 5 B-52H bomber wings externally may also be overstated by 10 lift trailers. This view is strengthened by the fact that the improved MHU-173 trailers, which are expected to be easier to operate and have a 90 percent in-commission rate, are to be assigned to B-52H bomber wings.

B-1B lift trailer requirements may be lower than currently planned

The Air Force also has identified requirements for 90 munitions lift trailers to load the 90 B-1B bombers to be deployed between 1985 and 1988. These requirements are based on each B-1B having three internal bomb bays and the 1:3 ratio determined in SAC's 1977 analysis for B-52G bombers. Use of this ratio for the B-1B may overstate lift trailer requirements because

--Air Force plans to acquire 200 rather than 300 weapons launchers for B-1B bombers would indicate 2 rather than 3 weapons loads for each B-1B bomber; and

--the Air Force plans to buy new simplified munitions lift trailers for the B-1B that are expected to be easier to operate and repair and more reliable than the MHU-173.

These factors indicate that use of the 1:3 ratio of trailers to weapons loads determined for B-52 bombers could lead to an overstatement of the number of lift trailers needed for B-1B bombers. Considering the factors discussed above, we estimate a need for only about 71 munitions lift trailers to support the 90 B-1B bombers or 19 fewer trailers than the quantity now shown as required. This estimate of 71 is based on 1 lift trailer for each of the non-alert bombers and two spare lift trailers for each of the four planned main operating bases. We believe this estimate is reasonable considering Air Force plans to buy more reliable lift trailers and only two internal launchers for each B-1B bomber.

In our view, reanalysis of Air Force lift trailer requirements should be conducted before additional lift trailers are acquired. We believe this analysis could show that as many as 39 of the 245 lift trailers currently identified as required may not be needed. The number 39 is comprised of the 20 lift trailers for B-52Gs and B-52Hs discussed on page 6 and the 19 lift trailers for B-1Bs discussed above. Based on the assumption used, we believe a savings of $4 million to $13 million could be achieved. This matter is discussed further below.

Agency comments and our evaluation

In its April 25, 1985, official comments on a draft of this report (see Appendix II), the Department of Defense (DOD) stated that the Air Force will conduct a review of requirements for munitions lift trailers. It stated that this review will be completed within 60 days. DOD pointed out that any savings from reduced lift trailer requirements would be dependent on results of the requirements review. In any case, DOD believed that calculation of savings should be based on a cost of $216,000 for each lift trailer rather than the $500,000 used in our draft report because the Air Force has a firm fixed price quote at the lower figure for the PACCAR trailer. The estimated price of $500,000 used in our draft report was based on prior unit costs of the MHU-173 trailer. However, as discussed below, we have recomputed our estimated savings based on a $216,000 unit cost.

As noted above, we questioned the need for 39 lift trailers: 20 for B-52G and B-52H bombers and 19 for B-1B bombers. In its comments on our draft report, DOD agreed that the Air Force should complete its re-analysis and validation of present and future lift trailer requirements before it obligates funds for additional trailers. However, prior to DOD's official comments, the Air Force awarded a contract for 46 improved MHU-173 lift trailers. Since this quantity completes the total planned buy of trailers for B-52s, it includes the 20 trailers that we believe may be excessive to B-52 requirements. Therefore, unless the contract quantity is reduced, the potential for an $8.8 million savings (20 trailers at a per unit contract price of $440,000) on these 20

trailers would be lost. In that event, the only remaining savings would result from not buying the 19 trailers for use with the B-1Bs. If the PACCAR trailers are procured for the B-1Bs, as the Air Force presently intends, a total savings of about $4.1 million (19 lift trailers at $216,000 each) could be achieved.

PROPOSED LIFT TRAILER MODIFICATIONS MAY NOT BE COST EFFECTIVE

The Aeronautical Systems Division is considering, among other options, a $20 million program to remanufacture the 80 remaining MHU-173 munitions lift trailers to incorporate all of the improvements included in the improved MHU-173 design. This program would provide a single, standard lift trailer for all B-52 bombers. The advantages, according to the Air Force, include

--better lift trailer performance, since the improved MHU-173 is expected to be easier to operate and maintain,

--an estimated $34 million reduction in operating and support costs over 20 years of use,[1]

--elimination of the problems associated with two different lift trailers and related support and training systems at B-52 bases, and

--avoidance of approved and proposed engineering changes to the MHU-173s estimated to cost $4.6 million.

While these advantages are important, our evaluation indicates the MHU-173 lift trailers' expected useful life may not be long enough to justify the cost of remanufacturing them.

The Air Force estimates that annual operating and support costs for a MHU-173 lift trailer are about $28,700 while those for an improved MHU-173 lift trailer are expected to be about $7,900. Remanufacturing 80 MHU-173 lift trailers, according to the Air Force, will save about $1.7 million annually, or about $34 million over the projected 20 year life of the remanufactured lift trailers. The estimated $20 million cost of remanufacturing MHU-173s can be repaid through reduced operation and support costs in about 12 years. But there is no approved plan indicating how the remanufactured MHU-173 lift trailers are to be used for the 12 to 20 years needed to realize projected savings.

Currently 60 of the MHU-173 lift trailers that may be remanufactured are assigned to B-52G bomber bases. The other 20 MHU-173s are to be assigned to B-52H bases. B-52G bombers were delivered to the Air Force in the late 1950s and by 1990 will have

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[1]Air Force estimates of program costs and expected operations and maintenance savings are computed in 1984 dollars.

been in service for about 33 years. By 1990 B-52H bombers will have been in service for about 31 years. Long range bomber force plans indicate the 90 B-52G bombers equipped to carry cruise missiles are to be phased out of the force and retired as advanced technology bombers are acquired. While no firm date has been established for this force structure change, planning estimates range from the late 1980s through the early 1990s. B-52H bombers are to remain in the bomber force until at least the late 1990s. Thus, if these plans are implemented, MHU-173 lift trailers supporting B-52G bombers will be needed for another 4 to 8 years while lift trailers supporting B-52H bombers will be needed for about 15 years.

Since it will take several years to remanufacture all MHU-173 lift trailers, the 20 year useful life projected by the Air Force for them may not be obtained unless they are used to support future bombers after B-52s are retired.

The Air Force has not decided what to do with 60 MHU-173 lift trailers after B-52G bombers are retired. Information obtained during our evaluation indicates the Air Force could

--dispose of the trailers when B-52Gs are retired,

--transfer them to B-52H bases, thereby releasing improved MHU-173 lift trailers to support advanced technology bombers, or

--modify them for use with advanced technology bombers.

Disposal of MHU-173 lift trailers when B-52Gs retire provides a useful life of about 4 to 8 years, which is less than the 12 years needed to justify the expense of remanufacturing them. A longer useful life of about 10 to 12 years could be obtained by transferring MHU-173 lift trailers to B-52H bases after B-52Gs are retired. In this case, the Air Force would not have to remanufacture the MHU-173s since they are designed to support both B-52Gs and B-52H bombers, but operating and support costs would be higher than desired. This transfer would release 60 improved MHU-173 lift trailers from B-52H bases. After relatively minor modifications Air Force officials believe these lift trailers could be used to support advanced technology bombers.

Alternatively, the Air Force could remanufacture the 60 MHU-173 lift trailers for use with advanced technology bombers and obtain the 20 years of useful life and associated savings projected in its analysis. This alternative, however, assumes remanufacturing MHU-173 lift trailers is the least costly alternative for obtaining lift trailers for advanced technology bombers. This has not been demonstrated. For example, if the Air Force buys a new design lift trailer for B-1B bombers that costs less

than remanufacturing MHU-173 lift trailers, it may be more cost effective to acquire new lift trailers for advanced technology bombers.

We believe remanufacturing MHU-173 lift trailers can significantly reduce future operating and support costs, but a useful life of at least 12 years after remanufacture is needed to justify the estimated $20 million cost of the proposed program. Since bomber force structure changes are not firmly defined and other alternatives may be available to provide lift trailers for advanced technology bombers, we believe the expected useful life of MHU-173 lift trailers must be better defined before the cost effectiveness of remanufacturing them can be determined.

Agency comments and our evaluation

DOD agreed that remanufacture of the 80 MHU-173 trailers might not be cost effective. It stated, however, that although the Aeronautical Systems Division had considered remanufacturing the trailers, no program had been officially recommended to or approved by Air Force Headquarters. DOD said that no decision will be made on this matter until the Air Force completes its requirements review.

CONCLUSIONS AND RECOMMENDATIONS

We believe that current lift trailer requirements may be overstated and could result in acquiring more lift trailers than are needed to support the bomber force. We also believe that remanufacturing MHU-173 lift trailers could substantially reduce future operating and support costs, but the Air Force has not determined how the trailer will be used or for how long.

Actions are apparently being taken that will address the two concerns we have expressed, provided they are completed in a timely manner. Therefore, we recommend you ensure that the Air Force

- completes its re-analysis and validation of present and future lift trailer requirements before it obligates funds to buy additional lift trailers and

- does not remanufacture the 80 MHU-173 lift trailers until uncertainty surrounding their useful lives is resolved and their lives are shown to be long enough to justify the expense.

In its official comments, DOD stated that it concurred with both our recommendations. However, subsequent to receipt of our report draft and prior to DOD providing us with its comments, the

Air Force awarded a contract for 46 more MHU-173 trailers. As noted on page 7, unless the contract quantity is reduced, the potential savings of $8.8 million from not buying 20 trailers will be lost.

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The objectives, scope, and methodology of our review are described in appendix I.

As you know, 31 U.S.C. 720 requires the head of a federal agency to submit a written statement on actions taken on our recommendations to the House Committee on Government Operations and the Senate Committee on Governmental Affairs not later than 60 days after the date of the report and to the House and Senate Committees on Appropriations with the agency's first request for appropriations made more than 60 days after the date of the report.

We are sending copies of this report to the Chairmen of the above-mentioned committees and the Chairmen of the House and Senate Committees on Armed Services and the Budget. We are also sending copies to the Secretary of Defense and the Director, Office of Management and Budget.

Sincerely yours,

Bill W. Thurman

for Frank C. Conahan
Director

APPENDIX I

OBJECTIVES, SCOPE, AND METHODOLOGY

We performed this evaluation between June and October 1984 to determine how well Air Force munitions lift trailer programs and acquisition plans were coordinated with planned modernization of the strategic bomber forces. We examined lift trailer requirements, development, procurement history, acquisition plans, and operational experience since 1981. As a part of this work, we visited Griffiss Air Force Base, which is a SAC operations base. We evaluated Air Force programs to improve the existing MHU-173 lift trailer design and obtained proposals from industry for a simpler, more reliable, less costly munitions lift trailer for B-1B and future bombers.

We obtained information on these programs through discussions with, and documents provided by, representatives of Air Force headquarters and organizations charged with developing, buying, and using munitions lift trailers. Specifically, we visited the:

--Office of the Deputy Chief of Staff, Research, Development, and Acquisition; Headquarters, U.S. Air Force; Washington, DC;

--Office of the Deputy Chief of Staff, Logistics and Engineering; Headquarters, U.S. Air Force; Washington, DC;

--Headquarters, Air Force Systems Command; Washington, DC;

--Aeronautical Systems Division, Air Force Systems Command; Wright-Patterson Air Force Base, Ohio;

--Armament Division, Air Force Systems Command; Eglin Air Force Base, Florida;

--Strategic Air Command Headquarters; Offutt Air Force Base, Nebraska;

--416th Bomb Wing, Strategic Air Command; Griffiss Air Force Base, New York; and

--AAI Corporation; Cockeysville, Maryland.

We also reviewed pertinent DOD and Air Force regulations, force structure plans, program directives, budgetary data, and congressional guidance on the programs.

Our review was made in accordance with generally accepted government auditing standards.

APPENDIX II

THE ASSISTANT SECRETARY OF DEFENSE

WASHINGTON, D.C. 20301

MANPOWER,
INSTALLATIONS
AND LOGISTICS

25 APR 1985

Mr. Frank C. Conahan
Director, National Security and
International Affairs Division
U.S. General Accounting Office
Washington, D.C. 20548

Dear Mr. Conahan:

This is the Department of Defense response to your GAO draft report, GAO Code 392026, OSD Case #6707, entitled "Requirements For Munitions Lift Trailers To Support Strategic Bombers."

In the report, the GAO points out that current stated munitions lift trailer requirements are based on a 1977 Strategic Air Command (SAC) study. As some requirements parameters have changed since completion of the study, the GAO believes that requirements may now be overstated and that, therefore, savings could be realized if actual requirements are now lower. The DoD concurs that the requirements for munitions lift trailers to support strategic bombers should be reviewed. Accordingly, the Air Force and SAC will perform a review to determine current requirements.

Detailed DoD comments addressing each of the findings and recommendations contained in the draft report are in the enclosure to this letter. DoD appreciates the opportunity to comment on the draft report.

Sincerely,

Jerry L. Calhoun
ACTG Assistant Secretary of Defense
(Manpower, Installations & Logistics)

Attachment
as

APPENDIX II

ENCLOSURE 1

GAO DRAFT REPORT - DATED MARCH 4, 1985
(GAO CODE NO. 392026) OSD CASE NO. 6707
"REQUIREMENTS FOR MUNITIONS LIFT TRAILERS TO SUPPORT STRATEGIC BOMBERS"

DEPARTMENT OF DEFENSE COMMENTS

FINDINGS

FINDING A: SAC's 1977 Lift Trailer Requirements Analysis Should Be Updated. The GAO found that in 1977, before MHU-173 lift trailer development had begun, the Strategic Air Command (SAC) prepared an analysis of the number of munitions trailers needed to support a force of 151 B-52G bombers equipped to carry cruise missiles. This analysis concluded that one lift trailer was required to support each three weapons loaded. The GAO found that this SAC analysis had not been updated to reflect actual experience using the MHU-173 lift trailers or change in bomber force structure. Instead the 1:3 ratio of lift trailers to weapons had been applied to currently planned force structure to derive current lift trailer requirements. GAO concluded that a re-analysis of lift trailer requirements is needed to provide a sound basis for planned procurements. The GAO noted, in this connection, that SAC and Headquarters Air Force officials agreed that the 1977 requirements analysis should be updated to reflect recent operational experience with MHU-173 lift trailers, bomber force structure changes, and the greater effectiveness of the improved MHU-173. GAO pointed out that, based on the results of the GAO evaluation, Headquarters Air Force had directed SAC to re-analyze munitions lift trailer requirements for current and future bombers. This study is to be completed before contracts for additional munitions lift trailers are awarded. (pp. 5-6, 10, GAO Draft Report)

DoD RESPONSE: DoD partially concurs. SAC's lift trailer requirements were updated to reflect changes in bomber force structure. Headquarters, United States Air Force (HQ USAF) and SAC will review the 1977 requirements study to determine current lift trailer requirements based on all relative parameters. This review will be completed within sixty days.

APPENDIX II

ENCLOSURE 1

Finding B: The Operational Plan At Griffiss Air Force Base (AFB) And Lift Trailer Availability Data Indicate Requirements May Be Overstated. The GAO was advised by a SAC official responsible for monitoring the acquisition of munitions lift trailers that an accurate assessment of lift trailer requirements could be obtained from individual bomber bases, as each base prepares a force generation plan that identifies equipment needed to bring all assigned bombers to full alert. At Griffiss AFB, NY, the GAO found that the force generation plan provided for 8 MHU lift trailers to load cruise missiles on non-alert B-52G bombers, which in essence allowed for some problems that may be encountered in an emergency. The GAO also found that Griffiss AFB had 4 additional lift trailers; 2 as spares, one to maintain and check out cruise missile pylons, and one for training loading crews. GAO further found that since January 1984, availability rates of lift trailers at all B-52G bases averaged 82 percent, and at Griffiss 81 percent. Based on these findings and Air Force officials' advice that (1) the preventative maintenance program for lift trailers was being examined to find ways to shorten it, (2) they believed the availability of spare parts for these trailers is improved and (3) nonessential maintenance of trailers is deferred, routine maintenance on cruise missile pylons is suspended and crew training ceases during force generation, the GAO concluded that two spare MHU-173 lift trailers may not be needed at Griffiss. Since each of the B-52G bomber wings is to be assigned 12 munition lift trailers (for a total of 60), GAO also concluded that a re-analysis of lift trailer requirements based on force generation plans could show that up to 10 lift trailers may not be needed. Similarly, since B-52G and B52-H bombers are identical with respect to loading cruise missile pylons, The GAO concluded that Air Force requirements for 60 lift trailers to load the 5 B-52H bomber wings externally may also be overstated by 10 lift trailers. According to the GAO, this view is strengthened by the fact that improved MHU-173 trailers, which are expected to be easier to operate and to have a 90 percent in-commission rate, are to be acquired for B-52H bomber wings. (pp. 7-9, GAO Draft Report)

DoD RESPONSE: DoD concurs. The Air Force requirements review will determine total munitions lift trailer requirements, including Griffiss AFB.

APPENDIX II

ENCLOSURE 1

Finding C: B-1B Lift Trailers Requirements May be Lower Than Currently Planned. The GAO reported that the Air Force also had identified requirements for 90 munitions lift trailers to load the 90 B-1B bombers to be deployed between 1985 and 1988. The GAO found these requirements were based on each B-1B having three internal bomb bays and on the 1:3 ratio determined in SAC's 1977 analysis for B-52G bombers. The GAO also found that the use of this ratio for the B-1B might overstate lift trailer requirements because (1) the Air Force plans to acquire 200 rather than 300 weapons launchers for B-1B bombers, would indicate 2 rather than 3 loads for each B-1B bomber; and (2) the Air Force plans to buy new simplified munitions lift trailers (manufactured by PACCAR, Inc.) for the B-1B that are expected to be easier to operate and repair, and more reliable than the MHU-173. Considering these factors, the GAO estimated a need for only about 71 munitions lift trailers to support the 90 B-1B bombers, or 19 fewer trailers than the quantity shown as required. The GAO indicated that its estimate is based on 1 lift trailer for each of the non-alert bombers and two spares lift trailers at each of the four planned main operating bases. (pp. 3, 9 & 10, GAO Draft Report)

DoD RESPONSE: DoD concurs. The Air Force requirements review will determine total munitions lift trailer requirements.

Finding D: Re-analysis Of Lift Trailer Requirements Could Save Approximately $19.5 Million. The GAO noted that Air Force's stated requirement for 247 would be fulfilled by 82 MHU-173 lift trailers already acquired, 25 improved MHU-173 lift trailers on order, 48 additional improved MHU-173 lift trailers to be procured in FY 1985, and 92 PACCAR lift trailers to satisfy B-1B requirements. However, based upon its findings (A, B and C above), The GAO concluded that a total of 39 of the 247 lift trailers currently identified as required may not be needed. Reducing the $588,000 average MHU-173 trailer cost to $500,000 to obtain a conservative estimate, the GAO also concluded that re-analysis could save approximately $19.5 million. (pp. 2-5, 10, 11 and 14, GAO Draft Report)

DoD RESPONSE: DoD partially concurs. While DoD agrees that if requirements are reduced savings will accrue, determination of these savings is dependent upon the planned requirements review. In any case, savings should be based on a unit cost of $216,000 per lift trailer rather than $500,000, as the Air Force has a firm fixed price quote at the lower price.

APPENDIX II

ENCLOSURE 1

FINDING E: Proposed Lift Trailer Modifications May Not Be Cost Effective. The GAO reported that the Aeronautical Systems Division has recommended, to Air Force Headquarters, a $20 million program to re-manufacture 80 MHU-173 munitions lift trailers according to the improved MHU-173 design to provide a single, standard lift trailer for all B-52 bombers. The GAO found that the estimated $20 million cost of re-manufacturing MHU-173s could be repaid through reduced operation and support costs in about 12 years. The GAO also found, however, that there is no approved plan indicating how the re-manufactured MHU-173 lift trailers would be used for the 12 years necessary to break even and the 20 years needed to realize the projected savings. The GAO further found that planning estimates indicate that the 90 B-52Gs equipped with cruise missiles are to be phased out of the force sometime between the late 1980s and the early 1990s, as advanced technology bombers are acquired. Simularly, GAO found that B-52H bombers are to remain in the force until at least the late 1990s. As several years would be required to re-manufacture all MHU-173 lift trailers, the GAO concluded that the 20 years useful life the Air Force projects for these trailers might not be obtained before B-52s are retired. The GAO concluded that other, possibly cheaper, alternatives may be available to provide lift trailers for the advance technology bomber. The GAO pointed out that SAC officials believe more testing of the improved MHU-173 is necessary and that cost-effectiveness of alternative lift trailers for future bombers should be analyzed before a decision is made to proceed with the re-manufacturing program. The GAO noted that an Air Force headquarters official said these actions would be completed before a decision is made on the proposal. (pp.11-14, GAO Draft Report)

DoD RESPONSE: DoD partially concurs. DoD agrees that re-manufacture of the 80 MHU-173 munition trailers may or may not be cost effective. However, while the re-manufacture of the trailers was among the concepts considered by the Aeronautical Systems Division, no program to do so was officially recommended to or approved by Air Force Headquarters. No decision will be made on fulfilling the B-52 lift trailer requirement until the Air Force completes its requirements review.

ENCLOSURE 1

Recommendation 1: The GAO recommended that the Secretary of the Air Force ensure that the Air Force completes its re-analysis and validation of present and future lift trailer requirements before it obligates funds to buy more than 208 trailers. (p.14, GAO Draft Report).

DoD RESPONSE: DoD concurs. Headquarters United States Air Force will review the 1977 requirements study to determine its current lift trailer requirements. This review will be completed within sixty days.

Recommendation 2: The GAO recommended that the Secretary of the Air Force ensure that the Air Force does not re-manufacture the 80 MHU-173 lift trailers until uncertainty surrounding their useful lives is resolved and their lives are shown to be long enough to justify the expense. (p.14, GAO Draft Report)

DoD RESPONSE: DoD concurs. The Air Force plans no action to re-manufacture the 80 MHU-173 trailers. A decision concerning how best to provide munitions lift trailers for the B-52 will not be made until the Air Force completes its requirements review and the most cost effective alternative is determined.

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